

## THE CLAIMS

1. (currently amended) A nozzle for an injection molding machine, comprising:
- a nozzle body having first and second passageways therethrough, a counter bore defining an inner wall and a ledge, a portion of said inner wall being threaded, and an annular groove in said counter bore ledge, said annular groove being in fluid communication with said nozzle body second passageway;
- an inner nozzle having a first end and having an orifice at a second end, said inner nozzle having a passageway therethrough in fluid communication with said nozzle body first passageway; and
- an outer nozzle removably and fixedly coupled to said nozzle body at a first end and having an orifice at a second end, said outer nozzle having a passageway therethrough in fluid communication with said nozzle body second passageway, said inner nozzle being positioned within said outer nozzle passageway.
2. (canceled)
3. (currently amended) The nozzle of claim [[2]] 1, wherein said annular groove has a hemispherical shape.

1 4. (currently amended) The nozzle of claim [[2]] 1, wherein said outer nozzle further  
2 includes:  
3 a wall having a threaded portion to matingly engage said nozzle body inner wall threaded  
4 portion; and  
5 an annular groove on an inner end of said outer nozzle wall positioned to matingly  
6 engage said nozzle body annular groove to provide fluid communication between said nozzle  
7 body second passageway and an inner surface of said outer nozzle wall.

1 5. (original) The nozzle of claim 4, wherein said outer nozzle annular groove has a  
2 hemispherical shape.

1 6. (original) The nozzle of claim 4, wherein:  
2 said outer nozzle further includes a ledge in said inner surface of said outer nozzle wall;  
3 and  
4 said inner nozzle further includes a wall having a ledge on an outer surface of said inner  
5 nozzle wall, said inner nozzle ledge configured to matingly engage said outer nozzle ledge.

1 7. (original) The nozzle of claim 6, wherein said inner and outer nozzles are configured  
2 such that when said inner nozzle ledge is matingly engaged with said outer nozzle ledge and said  
3 outer wall threaded portion is matingly engaged with said nozzle body inner wall threaded  
4 portion, said inner nozzle is retained such that said inner nozzle passageway is in fluid  
5 communication with said nozzle body first passageway and said outer nozzle passageway is in  
6 fluid communication with said nozzle body second passageway.

1 8. (original) The nozzle of claim 7, wherein said nozzle body, said inner nozzle, and said  
2 outer nozzle are all substantially concentric.

1 9. (original) The nozzle of claim 1, wherein:  
2 said inner nozzle orifice and said outer nozzle orifice are substantially concentric and  
3 substantially coplanar; and  
4 said outer nozzle orifice substantially surrounds said inner nozzle orifice.

1 10. (original) The nozzle of claim 9, wherein said inner nozzle orifice has a diameter of  
2 approximately 0.020 inch to approximately 0.150 inch.

1 11. (original) The nozzle of claim 10, wherein said outer nozzle orifice has a diameter of  
2 approximately 0.050 inch to approximately 0.250 inch.

1 12. (original) The nozzle of claim 1, wherein a ratio of a diameter of said outer nozzle to a  
2 diameter of said inner nozzle is from approximately 1:1 to approximately 10:1.

1 13. (original) The nozzle of claim 12, wherein said ratio is less than approximately 5:1.

1 14. (original) The nozzle of claim 12, wherein said ratio is less than approximately 3:1.

1 15. (original) The nozzle of claim 1, wherein:  
2 said inner nozzle orifice and said outer nozzle orifice are substantially concentric and not  
3 substantially coplanar; and  
4 said outer nozzle orifice substantially surrounds said inner nozzle orifice.

1    16.    (original) The nozzle of claim 1, wherein:  
2           said inner nozzle further includes a wall having an inner surface and an outer surface;  
3           said inner surface defines said inner nozzle passageway; and  
4           said outer surface has a plurality of radial grooves, said radial grooves being in fluid  
5    communication with said nozzle body second passageway.

17. (currently amended) ~~The A nozzle of claim 16~~ for an injection molding machine,  
comprising:  
a nozzle body having first and second passageways therethrough;  
an inner nozzle having a first end and having an orifice at a second end, said inner nozzle  
having a passageway therethrough in fluid communication with said nozzle body first  
passageway; and  
an outer nozzle removably and fixedly coupled to said nozzle body at a first end and  
having an orifice at a second end, said outer nozzle having a passageway therethrough in fluid  
communication with said nozzle body second passageway, said inner nozzle being positioned  
within said outer nozzle passageway; wherein:  
said inner nozzle further includes a wall having an inner surface and an outer surface;  
said inner surface defines said inner nozzle passageway;  
said outer surface has a plurality of radial grooves, said radial grooves being in fluid  
communication with said nozzle body second passageway;  
said radial grooves extend from said inner nozzle first end to an alignment diameter of  
said inner nozzle;  
said inner nozzle further includes an annular groove between said alignment diameter and  
said inner nozzle orifice; and  
said inner nozzle further includes a plurality of outer passageways providing fluid  
communication between said radial grooves and said inner nozzle annular groove.

1 18. (original) The nozzle of claim 17, wherein:  
2 said inner nozzle further includes a tapered section between said inner nozzle annular  
3 groove and said inner nozzle second end; and  
4 an end of said tapered section and said outer nozzle defines said outer nozzle orifice, said  
5 outer nozzle orifice being annular.

1 19. (original) The nozzle of claim 18, wherein said inner nozzle further includes a section  
2 having a substantially uniform diameter between said inner nozzle annular groove and said  
3 tapered section.

1 20-26. (canceled)